

Claims

1) An apparatus for controlling connections between model railroad cars,
the apparatus comprising:

a drawbar having a length with opposite proximal and distal ends, the
5 drawbar proximal end being adapted to be operatively attached to a model
railroad car; and,

a magnetic surface at the drawbar distal end, the magnetic surface
having a first surface area of a first magnetic polarity and a second surface
area of a second magnetic polarity, the first magnetic polarity being opposite
10 the second magnetic polarity.

2) The apparatus of Claim 1, further comprising:

the first surface area and the second surface area are positioned
horizontally side by side on the magnetic surface.

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3) The apparatus of Claim 2, further comprising:

the magnetic surface being a surface of a permanent magnet.

4) The apparatus of Claim 3, further comprising:

20 a socket at the drawbar distal end, the socket having a cavity recessed
into the socket; and,

the permanent magnet being positioned inside the socket cavity.

- 5) The apparatus of Claim 1, further comprising:
the magnetic surface being a curved surface.
- 6) The apparatus of Claim 1, further comprising:
5 the magnetic surface being a convex surface.
- 7) The apparatus of Claim 1, further comprising:
the drawbar having a center axis that extends along the length of the
drawbar, and the drawbar being symmetric on opposite sides of the center
10 axis.
- 8) The apparatus of Claim 7, further comprising:
the magnetic surface first and second surface areas being on opposite
sides of the drawbar center axis.
- 15 9) The apparatus of Claim 1, further comprising:
the drawbar being a first drawbar;
a second drawbar like the first drawbar, the second drawbar having a
length with opposite proximal and distal ends, the second drawbar proximal
end being adapted to be operatively connected to a model railroad car;
20 a magnetic surface at the second drawbar distal end, the magnetic
surface having a first surface area of a first magnetic polarity and a second
surface area of a second magnetic polarity, the first magnetic polarity being
opposite the second magnetic polarity, whereby the first drawbar is coupled to
the second drawbar by engaging the magnetic surfaces of the first and

second drawbars with the first and second surface areas of the first drawbar opposing the respective second and first surface areas of the second drawbar, and where the first drawbar is uncoupled from the second drawbar by separating the magnetic surfaces of the first and second drawbars.

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10) The apparatus of Claim 9, further comprising:

an uncoupler mechanism having a first post and a second post that are mounted on the uncoupler mechanism for movement from first positions where the first and second posts are displaced from the first drawbar coupled
10 to the second drawbar, to second positions where the first and second posts are positioned adjacent the first drawbar coupled to the second drawbar, and the first and second posts being mounted on the uncoupler mechanism for movement of the first and second posts from the second positions to third positions of the first and second posts where the first and second posts are
15 spaced from each other by a distance where the first post will operatively engage with a model railroad car to which the first drawbar is attached and the second post will operatively engage with a model railroad car to which the second drawbar is attached and causes the model railroad cars to separate and cause the first drawbar magnetic surface to separate from the second
20 drawbar magnetic surface.

11) The apparatus of Claim 10, further comprising:

the first and second posts being mounted on the uncoupler mechanism by a pivot connection where the first and second posts pivot about the pivot

connection when the first and second posts move from the first positions to the second positions.

12) The apparatus of Claim 10, further comprising:

the first post being connected to the second post for relative linear
5 movement between the first and second posts when the first and second posts move from the second positions to the third positions.

13) An apparatus for controlling connections between model railroad cars, the apparatus comprising:

10 first and second drawbars, each drawbar having a length with opposite proximal and distal ends, the proximal end of each drawbar being adapted to be operatively attached to a model railroad car and the distal end of each drawbar having a magnetic material where the magnetic material of the first drawbar is attracted to the magnetic material of the second drawbar;

15 an uncoupler mechanism adapted to be positioned beneath a model railroad track section that at least partially supports a first model railroad car to which the proximal end of the first drawbar has been operatively attached and at least partially supports a second model railroad car to which the proximal end of the second drawbar has been operatively attached, and
20 where the magnetic material of the first drawbar is attracted to the magnetic material of the second drawbar causing the first drawbar distal end to engage with the second drawbar distal end, the uncoupler mechanism having a first post and a second post that are mounted on the uncoupler mechanism for movement from first positions beneath the track section to second positions

where the first and second posts project above the track section in positions adjacent the engaging first drawbar distal end and second drawbar distal end, and the first and second posts being mounted on the uncoupler mechanism for movement of the posts from the second positions to third positions of the

5 posts where the first and second posts are spaced from each other by a distance that causes the first post to operatively engage with and move the first model railroad car on the track section and causes the second post to operatively engage with and move the second railroad car on the track section causing the first drawbar distal end and the second drawbar distal end to

10 disengage.

14) The apparatus of Claim 13, further comprising:

the first and second posts being mounted on the uncoupler mechanism by a pivot connection where the first and second posts pivot about the pivot

15 connection when the first and second posts move from the first positions to the second positions.

15) The apparatus of Claim 13, further comprising:

the first post being connected to the second post for relative linear

20 movement between the first and second posts when the first and second posts move from the second positions to the third positions.

16) The apparatus of Claim 14, further comprising:

the first post being connected to the second post for relative linear movement between the first and second posts when the first and second posts move from the second positions to the third positions.

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17) The apparatus of Claim 13, further comprising:

a slide housing mounted on the uncoupler mechanism by a pivot connection for pivoting movement of the slide housing about the pivot connection; and,

10 the first post being on the slide housing whereby the first post pivots with the slide housing about the pivot connection when the first post moves from the first position to the second position.

18) The apparatus of Claim 17, further comprising:

15 a slide arm mounted on the slide housing for pivoting movement of the slide arm with the slide housing about the pivot connection, and for linearly reciprocating movement of the slide arm relative to the slide housing; and,

the second post being on the slide arm whereby the second post pivots with the slide housing and slide arm about the pivot connection when the
20 second post moves from the first position to the second position, and whereby the second post moves linearly with the slide arm relative to the slide housing when the second post moves from the second position to the third position.

19) The apparatus of Claim 18, further comprising:

a link having a length with opposite first and second ends, the link first end being operatively connected to the slide arm; and

a motive source operatively connected to the link second end, whereby
5 the motive source imparts movement to the link which in turn causes pivoting movement of the slide housing about the pivot connection and causes linearly reciprocating movement of the slide arm relative to the slide housing.

20) The apparatus of Claim 19, further comprising:

10 an electronic circuit operatively connected to the motive source to control the motive source, the electronic circuit being operable to cause the motive source to rotate the link second end in one complete rotation on each activation of the electronic circuit.